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L9: Entry 6 of 7

File: PGPB

Dec 13, 2001

DOCUMENT-IDENTIFIER: US 20010051884 A1

TITLE: Method and system for controlling warranty-related data and services

Abstract Paragraph (1):

A system and method of controlling warranty-related data and services provides centralized management of warranty programs for product vendors and purchasers. Data related to sales of products covered by warranties is compiled and processed and user-specific documents are generated. The documents are stored in the system and can be accessed over a computer network such as the Internet. A system server and control application provide a web site that allows a product purchaser to request a repair of a product under warranty, and then automatically arranges for the repair to be made by contacting a parcel delivery service and a repair center. The system receives period updates regarding the repair of the product, and makes the updates available to the system users in the form of accessible documents. The purchaser is able to quickly and easily obtain a repair for a product and be kept informed as to the status of the repair without expending much effort.

Summary of Invention Paragraph (4):

[0003] Billions of dollars are spent each year on products which are covered by warranties. Over and above the purchase price paid for the product, consumers frequently pay a premium for extended or enhanced warranty coverage for the products they purchase. Like other forms of insurance, warranties are typically not at the forefront of a consumer's mind until the coverage they provide is needed. That is, a warranty becomes important when a product fails to perform its intended function. Unfortunately, in addition to the aggravation inherent in buying a defective product, traditional warranty programs make obtaining a repair for the product extremely inconvenient for the aggrieved purchaser. For instance, obtaining a repair frequently requires the consumer to personally transport the product to the product's retailer or authorized repair center. Or if the product is too large to be transported by the consumer, the consumer has to arrange for an on-site repair service to come to his home or office to make the repair. As for the product that the consumer transported to the repair center, chances are that the consumer will have to pick up the repaired product himself. Therefore, in spite of the fact that the product is defective through no fault of the consumer, management of the repair process, and all of the inconvenience inherent therein, is the consumer's burden to bear.

Summary of Invention Paragraph (6):

[0005] A few prior art warranty management systems include web sites offering extended warranties to consumers. These sites require consumers to provide the site hosts with all of the information necessary for the issuance of a warranty. Therefore, even though these warranty programs owe their existence to the consumers who purchase their warranties, they inconvenience the consumers from the very start. And in return, the consumers are merely provided with a telephone number or an Internet address of a local repair center to contact in the event that a repair to a product is required. The consumer may additionally or alternatively be provided with a phone number to reach a technical support provider or an on-site service provider for larger products. But no matter what these systems provide to a consumer, they require the consumer to manage the repair of the product himself. The consumer is still responsible for either arranging for the product to get to and from the repair center--including the possibility that the consumer may have to transport the product himself--or making the arrangements necessary to have an on-site service provider come into his home. In essence, these web sites provide nothing more than another variation of the traditional brick-and-mortar repair reference service.

Summary of Invention Paragraph (12):

[0010] Upon receipt of a request for repair, the system notifies a parcel delivery

service to pick up the product and deliver it to a repair center. The system also notifies the repair center that the product will be delivered for service. Therefore, after merely requesting a repair for his product, the purchaser's responsibility in managing the repair process is complete. The process is then controlled by the system of the present invention until the repaired product is returned to the purchaser.

Summary of Invention Paragraph (13):

[0011] The vendor, parcel delivery service, and the repair center are all able to access their own accounts within the system as well. The system generates the accounts automatically. The vendor can view a list of all of the products it has sold, and the warranty plan covering each product. The system also performs data analysis functions for the benefit of the vendor. For example, the vendor can view a report which analyzes the percentage of extended warranties sold for a certain type of product, or for all products in a particular price range. This information is valuable for future business decisions to be made by the vendor.

Summary of Invention Paragraph (14):

[0012] The parcel delivery service and the repair center access the system so that users of the system, including the parcel delivery service and the repair center themselves, can track the progress or status of product repairs. The parcel delivery service and the repair center transmit status updates to the system, and the updates can then be viewed by the system's users. This allows for efficient coordination between the parcel delivery service and the repair center, and it keeps the purchaser informed of the status of the repair to his product. This is comforting for the purchaser, and it is convenient for the vendor, the parcel delivery service, and the repair center because they will not need to field telephone calls from the purchaser (or each other) inquiring as to the status of the repair.

Summary of Invention Paragraph (16):

[0014] Therefore, in accordance with the present invention, a process for controlling the repair of a product under warranty is provided. Information regarding a sale of a product under a warranty plan is compiled in a host system. A data transmission is sent to the purchaser of the product over a computer network, and the data transmission contains an instruction for initiating a repair to the product. The purchaser is provided with access to the host system via a computer network. A request for a repair to the product is received in the host system. A parcel delivery service is notified to pick up the product and deliver it to a repair center, and the repair center is notified that the product will be delivered for repair. A report regarding the repair of the product is generated and stored as a document maintained in the host system. One or more status updates regarding the repair of the product are received. The report is amended to reflect the status updates. The purchaser is provided with access to the report over a computer network.

Summary of Invention Paragraph (18):

[0016] In accordance with a more limited aspect of the present invention, the parcel delivery service and the repair center are provided with access to the host system and the report over a computer network.

Brief Description of Drawings Paragraph (8):

[0026] FIG. 6 is a block diagram of a repair center account document in accordance with the present invention;

Detail Description Paragraph (9):

[0035] With reference to FIG. 1, a system for controlling a warranty program and controlling the repair of a product under warranty in accordance with the present invention is shown. The system includes a host system 10 of one or more computers which includes a central processing unit 15 that controls the overall functionality of the system. The host system 10 communicates to the Internet 20 via a web server 30 or other network connectivity devices as are known in the art. Of course, it will be appreciated that the present invention may be configured with other types of computer networks as are known to those of ordinary skill in the art. A series of user systems, including one or more vendor systems 60, one or more purchaser systems 70, one or more parcel delivery systems 80, and one or more repair center systems 90, are provided with access to the host system 10 over the Internet 20 or other network. The present invention may also be configured so that access to the host system 10 is limited to any combination of one or more of the user systems 60, 70, 80, 90 depicted in FIG. 1. Through their respective user systems 60, 70, 80, 90, one or more vendors 65, one or more purchasers 75, one or more parcel delivery services 85, and one or more repair centers 95 are able to access the Internet 20 via any appropriate mechanism of Internet connectivity, such

as a personal computer including a modem to dial-up an Internet Service Provider.

Detail Description Paragraph (11):

[0037] With reference to FIG. 2, functions of the overall system and server control application 50 are shown. In particular, server control application 50 includes logic for controlling the generation and amendment of documents stored in the host system 10, as well as generating and transmitting electronic messages to vendors, purchasers, parcel delivery services, and repair centers. This includes processing and storing new data in appropriate records corresponding to a sale of one or more products under warranty, modifying existing data in the database, and retrieving data from the database 45 to be presented to the user 65, 75, 85, 95 at the user system 60, 70, 80, 90. Among the documents stored in the host system 10 are one or more vendor accounts 220. A vendor account is a document through which a vendor 65 is provided with access to a series of additional documents containing information relevant to one or more products sold by the vendor 65. The documents contained in the vendor account 220 also provide the vendor 65 with one or more selectable options for initiating actions to be executed by the host system 10. The documents provided to the vendor 65 will be described in greater detail below. Also included in the host system 10 is one or more purchaser accounts 230. The purchaser account 230 is a document through which a purchaser 75 is provided with access to a series of additional documents containing information relevant to products purchased by the purchaser 75 which are covered by a warranty. These documents also provide the purchaser 75 with one or more selectable options for initiating actions to be executed by the host system 10. The documents provided to purchaser 75 will be described in greater detail below. The host system 10 also includes one or more Parcel Delivery Service Accounts 240. Through the Parcel Delivery Service Account 240, the server control application 50 receives and stores status updates from the parcel delivery service 85 regarding the status of a delivery of a product for which a request for repair has been made. The parcel delivery service account 240 includes logic for tracking the repair of a product and makes this data accessible to the parcel delivery service 85. And a Repair Center Account 250 allows a repair center 95 to view a list of all of its presently pending repairs, report a delayed repair, and/or report the completion of a repair. The documents contained in the parcel delivery service account 240 and the repair center account 250 will be described in greater detail below.

Detail Description Paragraph (12):

[0038] Referring to FIG. 3, a process for controlling warranty related data and controlling a repair to a product under a warranty is shown. It will be appreciated that the logic of the host system 10 can be employed to perform the invention for a plurality of products, but, for exemplary purposes, the following description refers to only the process as it occurs for one product at a time. At block 300, the host system 10 receives and compiles information related to the sale of a product. In one embodiment, the information is transmitted by the vendor 65. In one embodiment of the invention, sale of the product occurs as the purchaser 75 buys the product from the vendor over a computer network, where multiple data transmissions may be exchanged between the vendor and the purchaser in the selection of the product and the confirmation of the sale. The information is transmitted to the host system via any known method of communication for example, a computer network. The information contains at least the identity of the product sold, the details of the warranty plan covering the product sold, and the identity and contact information of the purchaser 75 of the product sold. Regarding the identity of the product, the information includes, for example, a make and model number of the product, as well as a purchase price of the product. Regarding the details of the warranty plan, the information includes for example, the duration of the warranty and applicable terms and conditions. The contact information includes, for example, an e-mail address, home address, and telephone number of each purchaser 75 identified in the data transmission.

Detail Description Paragraph (14):

[0040] In the event that the vendor account 220 and/or a purchaser account 230 already exist for the particular vendor 65 or purchaser 75 identified in the information transmitted into the host system 10, no new accounts will be generated. The information will be processed as above, and after the logic of the control application 50 establishes the appropriate association between the vendor 65, the purchaser 75, and the product, the existing vendor account 220 and/or purchaser account 230 will be amended to reflect the new product and warranty information received by the host system 10.

Detail Description Paragraph (16):

[0042] At block 315, a request for a repair to the product is received into the host

system 10. In one embodiment of the invention, the request is received as the result of the purchaser 75 selecting an option for repair that is provided to the purchaser 75 in the purchaser account 230. This selection could occur, for example, by the purchaser locating the option for repairing a product displayed on his computer monitor and clicking it. The server control application 50 checks the request against the terms of warranty plan for the product at block 320. If the warranty covering the product expired prior to the request being made, notification to that effect is transmitted to the purchaser 75 at block 325. If the product is under its warranty at the time of the request, then a repair request is generated and transmitted to the parcel delivery service 85 and the repair center 95 as notification, and a repair report for the product is generated in the host system 10 at block 330. In another embodiment of the invention, the system will not allow the purchaser 75 to request a repair of a product whose warranty has expired. The logic of the server control application 50 determines the appropriate parcel delivery service 85 and repair center 95 to notify based upon factors including the nature of the product needing repair and the address of the purchaser 75. In one embodiment of the present invention, the notice is sent to the parcel delivery service 85 and the repair center 95 over a computer network. The repair report, for example, identifies the product to be repaired, the purchaser 75 of the product, the parcel delivery service notified, the repair center notified, and the date that the request was made.

Detail Description Paragraph (18):

[0044] At block 340 one or more updates regarding the status of the repair are received by host system 10 from the parcel delivery service 85 and/or the repair center 95. The updates include, for example, reports such as the location of the product as it is in transit to or from the purchaser 75 or the repair center 95. The updates can also include the time and date that the product is delivered to or picked up from the repair center 95. Moreover, the updates can also include reports regarding the progress or completion of the repair, or the estimated time of completion. In one embodiment of the present invention, the one or more updates are transmitted into the host system 10 over a computer network. In one embodiment, the host system 10 provides selectable options provided in the parcel delivery service account 240 and/or the repair center account 250 for the parcel delivery service 85 and/or the repair center 95 to transmit the updates to the host system 10. At block 345, server control application 50 provides for the repair report to be amended to reflect the one or more status updates received by the host system 10.

Detail Description Paragraph (19):

[0045] At block 350, the host system 10 provides the vendor 65 with an option to view a display of the repair report. The repair report is displayed to the purchaser 75 at block 355 if a request for the display of the repair report is received into the host system 10 from the purchaser 75. At block 360, the repair report is displayed to the parcel delivery service 85 if a request for the display of the repair report is received into the host system 10 from the parcel delivery service 85. At block 365, the repair report is displayed to the repair center 95 if a request for the display of the repair report is received into the host system 10 from the repair center 95. It is preferred that any request for viewing the repair report be received as the result of the vendor 65, purchaser 75, parcel delivery service 85 and/or the repair center 95 selecting an option for viewing the report that is presented in the vendor account 220, the purchaser account 230, the parcel delivery service account 240 and/or the repair center account 250, respectively. At the completion of the repair, the product will be returned to the purchaser 75 from the parcel delivery service 85.

Detail Description Paragraph (25):

[0051] Referring to FIG. 6, an embodiment of a repair center account 250 is shown. The repair center account 250 provides a General Page document 600 which allows the repair center 95 to access and view other documents contained within the repair center account 250. A Repairs List document 610 provides with a display of all of the repairs pending at the repair center 95. From the Repairs List document 610, the host system 10 provides the repair center with the option of electronically transmitting a report of a delayed repair at Delayed Repair document 620 or a terminated repair at Terminated Repair document 630. The information in the reports received by the host system 10 through the Repairs List document 610 are appended into the Repairs Tracking document 530 in the Purchaser Account 230.

CLAIMS:

1. A process for controlling a repair of a product under warranty, the process comprising the steps of: compiling information in a host system regarding a sale of the

product under warranty, the information identifying the product, a vendor of the product, a purchaser of the product, and a warranty plan for the product; providing the purchaser with a set of instructions for initiating a repair of the product via a transmission of data over a computer network; providing the purchaser with access to the host system via a computer network; receiving a request for a repair to be made to the product in the host system; notifying a parcel delivery service to pick up the product from the customer and deliver the product to a repair center; notifying the repair center that the product will be delivered for repair; generating a report regarding the repair of the product; storing the report in a document maintained within the host system; receiving one or more status updates from the parcel delivery service or the repair center containing information regarding the repair of the product; amending the report to reflect the information contained in the one or more status updates; providing the purchaser with access to the report over a computer network.

3. The process as set forth in claim 2 wherein the controlling of the repair of a product under warranty further includes: providing the parcel delivery service and the repair center with access to the host system via a computer network; and receiving the request for a repair and the one or more status updates in the host system via transmission over a computer network.

8. The process as set forth in claim 7 wherein providing the purchaser, the vendor, the parcel delivery service, and the repair center with access to the host system includes providing a website including a user interface accessible over the Internet, the user interface providing one or more selectable options.

10. The process as set forth in claim 9, wherein the controlling warranty-related data and services further includes: receiving a transmission over a computer network containing a request for repair, the request identifying at least one of the at least one product displayed in the purchaser account; designating a repair center to repair each one of the at least one product identified in the request; notifying a parcel delivery service to pick up each one of the at least one product identified in the request and deliver each one of the at least one product to a repair center designated by the host system; notifying the repair center designated for each one of the at least one product for which the request for repair was made that each one of the at least one product identified in the request will be delivered for repair; generating a repair report for each one of the at least one product identified in the request; storing each one of the at least one repair report as a document maintained within the host system; receiving one or more status updates from the parcel delivery service or the repair center containing information regarding the repair of each one of the at least one product identified in the request; amending each one of the at least one repair report to reflect the information contained in one or more repair status updates; and providing the purchaser with access to each one of the at least one repair report over a computer network.

12. The process as set forth in claim 11 wherein the controlling warranty-related data and services further includes: providing the parcel delivery service and the repair center with access to the host system via a computer network; receiving the one or more status updates via a transmission over a computer network; and providing the parcel delivery service and the repair center with access to each one of the at least one repair report via a computer network.

14. The process as set forth in claim 13 wherein the controlling warranty related data and services further includes: generating a parcel delivery service account document and a repair center account document for the parcel delivery service and the repair center notified of the request; providing the parcel delivery service with access to the parcel delivery service account document over a computer network; and providing the repair center with access to the repair center account document over a computer network.

15. The process as set forth in claim 14 wherein providing the purchaser, the vendor, the parcel delivery service, and the repair center for each of the at least one of the plurality of products sold with access to the host system includes providing a website including a user interface accessible over the Internet, the user interface providing one or more selectable options that, when at least one of the one or more options is selected, the repair report will be displayed.

16. A system for controlling warranty-related data and services, the system comprising: a user interface accessible over a computer network for a plurality of users; a data input/output component for receiving data containing warranty-related information over

a computer network, transferring the data within the system, and transmitting the data over a computer network; a database for storing the data within the system; logic for processing the data containing warranty-related information to identify a product, and also identify a vendor, a purchaser, and a warranty plan corresponding to the product; logic for establishing an association between the product, the vendor, the purchaser, and the warranty plan; logic for generating a vendor account document and a purchaser account document; logic for transmitting an electronic message to the purchaser upon receipt of the data containing warranty-related information; logic for processing a request for a repair to the product and notifying a parcel delivery service and a repair center of the request; logic for generating a repair report corresponding to the request for a repair; logic for processing one or more status updates containing data regarding the status of the repair; logic for amending the report to reflect the data regarding the repair; logic for generating a parcel delivery service account document and a repair center account document; and logic for displaying the vendor account document to the vendor, the purchaser account document to the purchaser, the parcel delivery service account document to the parcel delivery service, and the repair center account to the repair center, all over a computer network.

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File: PGPB

Mar 27, 2003

DOCUMENT-IDENTIFIER: US 20030061104 A1

TITLE: Internet based warranty and repair service

Summary of Invention Paragraph (12):

[0012] Most sellers have recognized the power of the integrated network of computers referred to as the Internet and most sellers are accessible to consumers through their personal computers utilizing an electronic address, such as URL (Uniform Resource Locator), on the World Wide Web. The seller's web site typically contains new product information and may provide information regarding the repair and servicing of products manufactured by that seller.

Summary of Invention Paragraph (13):

[0013] Generally, the seller's web site will be limited to its own products and is of no value to a customer seeking warranty support for multiple products from multiple sellers. U.S. Pat. No. 5,987,474, to Sandifer, that is incorporated by reference in its entirety herein, discloses a technical database that stores technical bulletins and other information, including warranty information, necessary to maintain and repair components of complex equipment, such as aircraft.

Summary of Invention Paragraph (18):

[0017] It is an advantage of the invention that via the Internet, the warranty administrator provides global customer service and promotes brand loyalty. Other advantages to the purchaser include ease in maintaining warranty records with all warranty records displayed on a personalized home page, ease to review and enhance warranties, and ease in activating a warranty. A further advantage to the customer is automatic notification of product alerts, warranty expirations and manufacturers incentives. Still further advantages of the invention are the automatic registration of a warranty at the point of sale or through the activation of a cash card magnetically encoded with product information at an Automated Teller Machine (ATM), on the Internet, or by phone, and the ability to acquire point-of-sale information via the Internet.

Summary of Invention Paragraph (21):

[0020] In accordance with one aspect of the invention, there is provided a method to provide customer warranty support and repair services via a computer network. The method utilizes at least a first database accessible via the computer network by a plurality of customers. At least one database includes a personalized portion for each one of the plurality of customers that requests warranty support. The personalized portion includes customer data necessary for a seller or manufacturer to provide warranty support of products sold by the seller. There is further at least a second database accessible to a plurality of manufacturers via the computer network that includes a personalized portion for each one of the plurality of manufacturers and contains warranty information regarding products sold by the manufacturer and/or a seller. In addition, a warranty administrator interfaces with and supports both the customers and the manufacturers.

Summary of Invention Paragraph (22):

[0021] In accordance with a second aspect of the invention, there is provided a method for repairing a defective product. This method includes the steps of (1) a customer accessing a warranty administrator and providing notice of the defective product via an integrated network of computers; (2) the warranty administrator electronically confirming that repair of the defective product is covered by a valid warranty; (3) the warranty administrator determining if in-home repair, in-service center repair, or return of the defective product is most appropriate; (4) the warranty administrator electronically notifying at least one of the manufacturer, the service center, a part distribution center, and a shipper of required activities; (5) the warranty

administrator ensuring that the product is properly repaired; and (6) the warranty administrator balancing payments between all involved entities.

Detail Description Paragraph (33):

[0080] From the warranty administrator's portal, illustrated in FIG. 11, the warranty administrator may select new problems 114 to view newly submitted problems from customers. Typically, the problem report will be of a form similar to that illustrated in FIG. 6. Based on the type of problem, manufacturer and location of the customer, the warranty administrator will select an appropriate service provider. This selection may be done by computer, for example utilizing a logic program to determine the most economical repair center, to balance the number of service requests among multiple providers or as specified by a manufacturer. Alternatively, a warranty administrator may manually select the service provider.

Detail Description Paragraph (43):

[0090] Other services provided by the warranty administrator may include consulting services, identifying warranty claim trends and product sales trends. This information could enable the manufacturer to maximize revenue by tailoring products and repair services to best meet those trends. The warranty information will also give the manufacturer a better view of the lifecycle 146 of its products. The warranty administrator may go beyond warranty repair and offer the purchaser insurance 148 for the product as well. Such insurance may be against theft, loss, damage, obsolescence or any other factor. Insurance may also be offered to manufacturers to defray the cost of providing warranty repairs. The insurance may be provided via the warranty administrator as captive insurance 150 or through a third party 152.

Detail Description Paragraph (64):

[0111] FIG. 15 graphically illustrates a model in which the customer 154 is instructed to send the product to a service center for repair. The customer 154 electronically notifies 156 the warranty administrator 158 of the problem. Product return may be instructed by the warranty administrator who notifies the customer 154 and the service center 158. The customer 154 is then notified 156 by the warranty administrator 158 where to return the product. This information may contain shipping instructions, a shipping label and postage if within the scope of the warranty.

Detail Description Paragraph (68):

[0115] The customer then receives return instructions. In a preferred embodiment, the customer 154 utilizes the replacement product packaging material to package the defective product which is then shipped 194 to service center for repair, for parts, for recycling or disposal. As with previous embodiments, costs between the various entities are then rectified by the warranty administrator 158 utilizing the services of the insurance company 180, if any, and bank 184.

CLAIMS:

1. A method to provide customer warranty support and repair services via a computer network, comprising: at least a first database accessible via said computer network by a plurality of customers, said at least one database including a personalized portion for each one of said plurality of customers that requests warranty support, said personalized portion including customer data necessary for a manufacturer to provide warranty support of products sold by said manufacturer or manufacturer authorized seller; at least a second database accessible to a plurality of said manufacturers via said computer network, including a personalized portion for each one of said plurality of manufacturers containing warranty information regarding products sold by said manufacturer or said manufacturer authorized seller; and a warranty administrator interfacing with and supporting both said plurality of customers and said plurality of manufacturers.

29. A method for repairing a defective product comprising the steps of: a customer accessing a warranty administrator and notifying said warranty administrator of said defective product via an integrated network of computers; said warranty administrator electronically confirming that repair of said defective product is covered by a valid warranty; said warranty administrator determining if in-home repair, in-service center repair, or return of said defective product is most appropriate; said warranty administrator electronically notifying at least one of said manufacturer, said service center, a part distribution center, and a shipper of required activities; said warranty administrator ensuring that said product is properly repaired; and said warranty administrator balancing payments between all involved entities.



31. The method of claim 22 wherein when in-service center repair is appropriate, said warranty administrator electronically coordinates between said customer, said service center and said shipper.

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File: USPT

Mar 3, 1998

DOCUMENT-IDENTIFIER: US 5724575 A

TITLE: Method and system for object-based relational distributed databases

Brief Summary Text (27):

One approach to maintenance of data in a distributed system is found in the SYBASE REPLICATION SERVER, a software database product made by Sybase, Inc., Emeryville, Calif. This system envisions maintaining multiple copies of a set of data on multiple servers, perhaps at multiple sites. Each copy at a remote site "subscribes" to a subset of data maintained at another site. The replication service keeps the multiple copies updated by replicating transactions initiated at a particular site directed against tables or data of interest, copying those transactions, and forwarding the copy of the transactions to remote destinations that apply these transactions to local copies of the data maintained at the remote sites. Thus, this system is essentially a "transaction store and forward" system based on subscription information.

Detailed Description Text (116):

The messages implemented in the object broker API 36 include an ADD request message, a SEARCH request message, a GET request message, and an UPDATE request message. While there are various scenarios associated with these various types of requests, it will be understood that these messages comprise the basic set of commands provided between the object broker 20 and each of the remote databases 28, to carry out the functions associated with the present invention. The messages communicated between the object broker 20 and the remote databases 28 are generally of the same basic form, and are typically initiated with a similar corresponding message received by a remote database 28 from its associated customer database 26 at a requesting customer site 12. For example, in the first scenario to be described, an ADD request message originating at a customer database (e.g. 26a) results in an add.sub.-- <class.sub.-- name> message being generated at the associated remote database (e.g. 28a) and transmitted to the object broker 20, which in turn generates corresponding messages to one or more other remote databases (e.g. 28a, 28b, 28c).

Detailed Description Text (165):

FIG. 14 illustrates the steps taken in the preferred embodiment to implement an UPDATE request message which is effected in the present invention to reflect a change to one or more attributes of an object. In other words, the UPDATE operation adjusts the appropriate tables in the appropriate remote location, and assigns a time stamp or other status information to indicate where the most current information is with respect to a particular object in the system. These steps are taken when a user at a customer database, such as 26a in FIG. 1, has new data (e.g., certain attributes have changed) and the new data is to be entered into the system for access by others on the network.

Detailed Description Text (172):

The simplest case, namely, that where the need exists to update information only in the local customer's database 26a is shown in FIG. 14. Again, it is assumed from the outset that a prior SEARCH operation has yielded an object identifier associated with an object having an object attribute to be corrected or updated. In the example of FIG. 14 it is assumed that an object identifier for a particular person has been retrieved as a result of a SEARCH operation, and the search operation has yielded the object identifier for a particular person. It is further assumed that a prior GET operation has yielded the return of object attributes such as address, social security number, date of birth, etc. and that at least one field or attribute is determined to be outdated or incorrect, and is to be updated.

Detailed Description Text (175):

In FIG. 14, the UPDATE operation is performed for an attribute associated with a particular person, e.g., a change in a person's home address. Thus, at step 1 in FIG.

14, a request message of the form update.sub.-- PERSON(MyPassword, Person(OBJID), NewAttribute) is formulated at the customer database 1 26a based on the object identifier previously obtained, with the class name in the illustrated example being PERSON. The "NewAttribute" is the value of data to be updated, for example, one or more address fields associated with the person's residence. This request message is then passed or otherwise communicated to remote database 1 28a.

Detailed Description Text (181):

At step 8, an UPDATE request message of the same form update.sub.-- PERSON(MyPassword, OBJID, NewAttribute) is passed back to the remote database 28a indicating that it may commit the NewAttribute to its object attribute tables 140 and update its object attribute table index table 150. Note in particular that the updated attribute is stored in RDB 1 28a, but there is no updating of information back to the customer database 26a; data sanctity has been preserved.

Detailed Description Text (182):

At step 9, the remote database 28a passes a success or fail message back to the object broker 20 indicating that the update operation succeeded or failed. At step 10, the object broker 20 passes a success or fail message back to the customer database 26a. The new attribute is now entered into the system, so that other requesting entities on the network will obtain the updated attribute in response to a GET message based on the object identifier for the object in question.

Detailed Description Text (263):

From the foregoing discussion, it should by now be understood that the present invention contemplates various computer programs running at the various computer systems of object broker 20, remote databases 28, with appropriate application program interfaces (API) to customer databases 26. The preferred embodiment of the present invention particularly contemplates usage of a software program called the "Patient Information Application" that runs on a terminal associated with a user's computer system 12, either as a stand-alone terminal such as the PC 49 in FIG. 2, or a process associated with the customer's database 26. The preferred Patient Information Application software is operative to generate various ADD, SEARCH, GET, and UPDATE messages, as described above, with minimal if any programming changes to the user's software associated with running the customer's database 26.

Detailed Description Text (265):

Turn next to FIG. 20 for a discussion of the use of the present invention, and particular of the Patient Information Application software, in conjunction with a health care information system such as that illustrated in FIG. 1. It will be recalled from previous discussion that a typical user computer site 12, even though it operates and maintains its own internal database as customer database 26, is connected for operation with the system 10 as a whole so that the most current information relating to objects managed in the system, such as patients, can be retrieved and utilized, and even selectively updated into the customer's database. In order to facilitate the interface by users at a user computer site 12, a computer program that runs on a computer associated with the user computer site 12 provides the front end to the system 10.